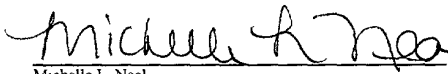


PATENT APPLICATION

*IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

*Group*  
*Art Unit:* Unknown  
  
*Attorney*  
*Docket No.:* SHC0131  
  
*Applicant:* Yoshikazu Shingu and Hirotomo Mukai  
  
*Invention:* DISPOSABLE DIAPER  
  
*Serial No:* Unknown  
  
*Filed:* Herewith  
  
*Examiner:* Unknown

Certificate Under 37 C.F.R. 1.10  
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PRELIMINARY AMENDMENT

Box Patent Application  
Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

Prior to the examination of the above-identified application, please amend the application  
as follows:

IN THE SPECIFICATION

Please replace the second full paragraph on page 1 with the following:

- -Conventional disposable diapers are provided in their rear waist regions with a pair  
of wings formed with a nonwoven fabric. In those diapers, the wings are formed with fastener  
sections serving to connect the front and rear waist regions to each other. The fastener sections  
are provided on inner surfaces thereof with adhesive zones or male members of so-called  
mechanical fasteners so that these adhesive zones or male members may be detachably fixed to  
the front waist region.- -

Please replace the first full paragraph on page 2 with the following:

- It is an object of this invention to design disposable diapers in which the male members may be easily anchored on the target zone or zones even if the fastener sections comprise nonwoven fabric and the male members of the mechanical fasteners are fixed to the nonwoven fabric.- -

Please replace the first full paragraph on page 3 with the following:

- According to this invention the wings are formed with a nonwoven fabric made of thermoplastic synthetic fibers, the nonwoven fabric partially extending outward from circumferentially outer side regions of the wings to form the fastener sections which are, in turn, provided on inner surfaces thereof with the male members of the mechanical fasteners, and the wings are formed on the inner surfaces thereof with a plurality of fine fusion spots at which the fibers are fused together so that the number of the fine fusion spots per unit area of the wings nonwoven fabric is larger in the outer side regions of the wings than inner regions of the wings extending inward from the outer side regions.- -

Please replace the first full paragraph on page 10 with the following:

- It is possible without departing from the scope of this invention to configure the outer side regions 41 so that these regions 41 may extend substantially the same as the fastener section 21. However, the outer side regions 41 extending from the fastener sections 21 to parts of the rear wings 12 avoid an anxiety that the fasteners 21 might be easily torn along proximal ends of the respective fastener sections 21 defining boundary lines between the fastener sections 21 and respective rear wings 12. Shape of the individual fusion spots 20 is not limited to circular shape and may be replaced by other appropriate shapes.- -

Please replace the first full paragraph on page 11 with the following:

- -In the disposable diaper according to this invention, the fastener sections are formed by attaching the male members of the mechanical fasteners to the nonwoven fabric of the rear wings. However, a user can quickly anchor the male members on the female members as the counterparts of the male members even if the male members are of a relatively small size. This is because the fastener sections and the vicinity thereof are formed with the fusion spots distributed at a sufficiently high density to improve the stiffness thereof.- -

#### IN THE CLAIMS

Please amend claim 1 as follows:

1.(Amended) A disposable diaper comprising:

a liquid-pervious topsheet;

a liquid-impervious backsheet;

a liquid-absorbent core disposed between said liquid-pervious topsheet and said liquid-impervious backsheet;

a front waist region;

a rear waist region;

a crotch region extending between said front waist region and said rear waist region in a longitudinal direction of the diaper;

wings formed on transversely opposite side portions of said rear waist region and extending outward in a circumferential direction intersecting said longitudinal direction; and

fastener sections formed on said wings and extending outward in said circumferential direction and provided on inner surfaces thereof with male mechanical fastener members,

said wings comprising a nonwoven fabric made of thermoplastic synthetic fibers, said nonwoven fabric partially extending outward from circumferentially outer side regions of said

wings to form said fastener sections which are, in turn, provided on inner surfaces thereof with said male mechanical fastener members,

said wings being formed on the inner surfaces thereof with a plurality of fine fusion spots at which said fibers are fused together, said plurality of fine fusion spots being arranged so that there is a greater number of said fine fusion spots per unit area in said outer side regions of said wings than in inner regions of said wings that extend inward from said outer side regions.

Please amend Claim 2 as follows:

2. (Amended) The diaper according to Claim 1, wherein said nonwoven fabric is stiffer in said outer side regions of said wings than in said inner side regions of said wings.

Please amend Claim 3 as follows:

3. (Amended) The diaper according to Claim 1, wherein said male mechanical fastener members are peelably engaged with said inner side regions of said wings.

#### IN THE ABSTRACT

Please amend the abstract as follows:

- -A disposable diaper having a pair of wings that are formed from a nonwoven fabric that partially extends outward in a circumferential direction to form fastener sections which are, in turn, provided on its inner surfaces with male members of mechanical fasteners. The nonwoven fabric is formed on the inner surface thereof with a plurality of fine fusion spots so that the number of the fine fusion spots per unit area of the inner surfaces is larger in the fastener sections and first regions than in second regions extending inside the first regions.- -

[illegible]

In the event applicant has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, applicant hereby petitions therefor and authorizes that any charges be made to Deposit Account No. 02-0385, Baker & Daniels.

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MSG/mln/184913

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### Changes Made to Specification Paragraphs

The second full paragraph on page 1 has been amended as follows:

Conventional disposable diapers are provided in [its] their rear waist [region] regions with a pair of wings formed with a nonwoven fabric. In those diapers, the wings are formed with fastener sections serving to connect the front and rear waist regions to each other. The fastener sections are provided on inner surfaces thereof with adhesive zones or male members of so-called mechanical fasteners so that these adhesive zones or male members may be detachably fixed to the front waist region.

The first full paragraph on page 2 has been amended as follows:

[In view of the problems as have been described above, it] It is an object of this invention to [improve the known] design disposable diapers [so that] in which the male members may be easily anchored on the target zone or zones even if the fastener sections comprise [the] nonwoven fabric and the male members of the mechanical fasteners are fixed to the nonwoven fabric.

The first full paragraph on page 3 has been amended as follows:

[The improvement according] According to this invention [is in that] the wings are formed with a nonwoven fabric made of thermoplastic synthetic fibers, the nonwoven fabric partially extending outward from circumferentially outer side regions of the wings to form the fastener sections which are, in turn, provided on inner surfaces thereof with the male members of the mechanical fasteners, and the wings are formed on the inner surfaces thereof with a plurality of fine fusion spots at which the fibers are fused together so that the number of the fine fusion spots per unit area of the wings nonwoven fabric is larger in the outer side regions of the

wings than inner regions of the wings extending inward from the outer side regions.

The first full paragraph on page 10 has been amended as follows:

It is possible without departing from the scope of this invention to configure the outer side regions 41 so that these regions 41 may extend substantially the same as the fastener section 21. However, the outer side regions 41 extending from the fastener sections 21 to parts of the rear wings 12 avoid an anxiety that the fasteners 21 might be easily torn along proximal ends of the respective fastener sections 21 defining boundary lines between the fastener sections 21 and respective rear wings 12. Shape of the individual fusion spots 20 is not limited to circular shape and may be replaced by [the] other appropriate [shape] shapes.

The first full paragraph on page 11 has been amended as follows:

In the disposable diaper according to this invention, the fastener sections are formed by attaching the male members of the mechanical fasteners to the nonwoven fabric of the rear wings. However, a user can quickly anchor the male members on the female members as the counterparts of the male members even if the male members are of a relatively small size. This is because the fastener sections and the vicinity thereof are formed with the fusion spots distributed at a sufficiently high density to improve the stiffness thereof.

#### Changes Made to Claims

Claim 1 has been amended as follows:

1.(Amended) A disposable diaper comprising:

a liquid-pervious [topsheet,] topsheet;

a liquid-impervious backsheet; [and]

a liquid-absorbent core disposed between [these two sheets] said liquid-pervious topsheet and said liquid-impervious backsheet; [so as to configure]

a front waist [region,] region;

a rear waist region; [and]

a crotch region extending between [these two waist regions] said front waist region and said rear waist region in a longitudinal direction of the diaper; [diaper, said rear waist region being formed on transversely opposite side portions thereof with]

wings formed on transversely opposite side portions of said rear waist region and extending outward in a circumferential direction intersecting said longitudinal direction; and [said wings being formed with]

fastener sections formed on said wings and extending outward in said circumferential direction and provided on inner surfaces thereof with male mechanical fastener members, [as components of mechanical fasteners, wherein:]

said wings [are formed with] comprising a nonwoven fabric made of thermoplastic synthetic fibers, said nonwoven fabric partially extending outward from circumferentially outer side regions of said wings to form said fastener sections which are, in turn, provided on inner surfaces thereof with said male mechanical fastener members, [of the mechanical fasteners; and]

said wings [are] being formed on the inner surfaces thereof with a plurality of fine fusion spots at which said fibers are fused together, said plurality of fine fusion spots being arranged so that [the] there is a greater number of said fine fusion spots per unit area [of said wings nonwoven fabric is larger] in said outer side regions of said wings than in inner regions of said wings [extending] that extend inward from said outer side regions.

Claim 2 has been amended as follows:

2. (Amended) The diaper according to Claim 1, wherein said [outer side regions of said] nonwoven fabric [are more stiff] is stiffer in said outer side regions of said wings than in said inner side [regions.] regions of said wings.

Claim 3 has been amended as follows:

3. (Amended) The diaper according to Claim 1, wherein said male mechanical fastener members are peelably engaged with said inner side [regions.] regions of said wings.

Variable	Mean	Standard deviation	Minimum	Maximum
Age	34.2	10.5	20	55
Gender	0.5	0.5	0	1
Marital status	0.6	0.5	0	1
Education	12.5	2.5	9	16
Income	15.2	5.8	10	25
Health status	0.8	0.4	0	1
Employment status	0.7	0.5	0	1
Home ownership	0.9	0.3	0	1
Vehicle ownership	0.6	0.5	0	1
Life satisfaction	4.2	1.5	1	7
Health-related quality of life	5.8	1.2	3	7
Physical functioning	6.5	1.0	4	8
Role limitations due to physical problems	6.2	1.1	4	8
Bodily pain	5.5	1.3	3	7
General health	5.2	1.4	3	7
Energy/fatigue	5.8	1.2	4	7
Emotional functioning	6.0	1.1	4	7
Social functioning	6.3	1.0	4	7
Cognitive functioning	6.1	1.1	4	7
Healthcare utilization	0.3	0.5	0	1
Medication use	0.2	0.4	0	1
Physician visits	0.4	0.5	0	1
Hospitalization	0.1	0.3	0	1
Emergency department visits	0.05	0.2	0	1
Long-term care use	0.02	0.1	0	1
Home care use	0.05	0.2	0	1
Assisted living use	0.01	0.1	0	1
Nursing home use	0.005	0.05	0	1

[illegible]